



THE PRINCE GEORGE'S COUNTY GOVERNMENT

OFFICE OF MANAGEMENT AND BUDGET INFORMATION TECHNOLOGY DIVISION

RADIO SYSTEMS SECTION

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September 16, 1996

Office of the Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

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Dear Sir:

The Prince George's County Government (Maryland) is pleased to submit comments regarding FCC 96-155, WT Docket No. 96-86, The Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010. I have enclosed the original and nine copies of our comments.

Thank you for the opportunity to provide input in this regulatory process. If you have any questions, please contact us.

Sincerely,

Jonathan P. Bigony
Radio Systems Manager

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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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In the Matter of)
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The Development of Operational,)
Technical, and Spectrum)
Requirements for Meeting)
Federal, State and Local Public)
Safety Agency Communication)
Requirements Through the)
Year 2010)

WT Docket No. 96-86

To: The Commission

**Comments of the
Prince George's County, Maryland
County Government**

1. Prince George's County, Maryland is a mixture of urban, suburban and rural areas that lie immediately to the east of the District of Columbia and encompasses 488 square miles occupied by a population of approximately 760,000. The County is responsible by charter to provide police and fire protection, provide local emergency management and disaster relief operations, operate correctional facilities, perform highway maintenance operations, provide public transportation and numerous other public functions to the citizens and guests of the County. The County provides communications support for many of the 28 municipalities with

“town police forces” within our border. We also provide fire and EMS mutual aid to Montgomery, Howard, Anne Arundel, Charles and Calvert Counties in Maryland, to the City of Alexandria, Virginia, and the District of Columbia. The County currently operates radio equipment in support of these functions on F.C.C. assigned channels in VHF, UHF, and SHF bands. We are currently involved in the construction of a new trunking system utilizing 10 NPSPAC¹ channels and are planning on constructing a 15 channel UHF-T band trunking system integrated with the 800 MHz trunking system through a multi-site switch. This integration will provide seamless trunking to all of our agencies not requiring long distance communications.

2. Prince George’s County agrees with the PSWAC definitions of Public Safety Services.² By broadly defining the service versus the current service structure³ and combining definitions, jurisdictions such as ours can license in one service and use the frequency(s) for any governmental function, and have access to all public safety frequencies. Under current rules, if a license is granted in the Police Radio Service for example, the local government cannot reallocate that frequency for use by its fire department without requesting a waiver or re-licensing.

¹ FCC Docket 87-112

² FCC 96-155 ¶ 24

³ 47 C.F.R. § 90.15

3. We agree with the “Interoperability” definition as proposed by the PSWAC.⁴ As to whether or not these definitions will expedite the development of Interoperability, we are unsure as to how this would occur.

4. Achieving true Interoperability through relocation of all public safety communications to a new band⁵ would be possible only if the hierarchial structure would be mandated by the Commission. Until common standards exist for all methods of operation i.e. conventional, trunking and other advanced methods and modes, true Interoperability cannot occur.

5. The use of commercial systems to provide critical communications services is in it self “problematic” since commercial providers go out of business, change ownership etc. putting public safety providers at risk of losing service at any time. Based on currently available commercial services, the cost of using these services would significantly exceed that of owning and operating private systems.

6. The designation of Universal Mutual Aid Channels⁶ is a noble idea as long as all radios manufactured for use by public safety/service providers are capable of operation on

⁴ FCC 96-155 ¶ 26

⁵ FCC 96-155 ¶ 34

⁶ FCC 96-155 ¶ 36

these channels. The designation of such channels in the NPSPAC⁷ plan was a good start. The current “mix and match” assignment of designated mutual aid channels has limited the utilization of these channels, since they are assigned in different services as well as different bands and are somewhat regional in their implementation.

7. Implementation of these interoperability standards would require, for a jurisdiction like ours, 7-10 years due the government’s desire to maximize its return of funds invested. It is estimated that a complete change-out of our current and planned systems would cost 25 to 35 million dollars if we were obligated to migrate to a new block of contiguous spectrum.

8. Common modality and methodology as well as hierarchial structure should be mandated with the technological detail placed in the public domain. The failure of the Commission to mandate certain standards, i.e. trunking and emission type, has fostered non-interoperability and division⁸ since manufacturer tend to protect their proprietary designs without regard to public safety’s needs, and are, in some cases, reluctant to license to others or to put this information in the public domain. The Commission chose to require a common modality and methodology in the creation of the AMPS standard, but yet was reluctant to similarly mandate a common modality and methodology for public safety radio systems. Competition between manufacturers that are providing products to the public safety/service arena would be increased by this mandate, with the end user benefitting from lower costs and

⁷ FCC Docket 87-112

⁸ Notes and proceedings of the APCO 25 Steering Committee

wider selection of equipment and features. Creating such a standard should encompass incorporation of the best of all currently available systems' operational characteristics, but should stop short of mandating every option and feature. If radio equipment were designed to operate at the basic level needed for interoperability in all modes, both conventional (analog FM), trunking and other advanced technologies, the end users could then make an informed decision on which additional features they require while retaining the ability to communicate with other agencies at any time.

9. The currently utilized mixture of portable and mobile equipment, fixed base and repeater stations, and fixed point to point relays serve our present needs reasonably well. The frequency bands allocated for use by jurisdictions and agencies also service our current needs adequately. There will always be a need for the long distance communications afforded by the low VHF frequencies, the good propagation characteristics of high VHF in the rural and suburban areas and the good propagation of the UHF frequencies in the urban setting. If a block of frequencies are allocated for public safety/service providers, a detailed analysis of cost and complexity versus operational capability should be undertaken. If, for example, a block of high UHF spectrum was allocated and users were either encouraged or mandated to migrate there, what level of complexity and cost would be required to accommodate users in a rural, wide area scenario?

10. Prince George's County envisions the implementation and use of Enhanced Dispatch, Transaction Processing, and Decision Support in the very near future. These

operations will be supported by the 800 MHz trunking system which will be installed shortly and the 490 MHz (UHF-T) trunking system to be installed several years from now. Snapshots and Field Fingerprint lookup may well be accommodated by these systems also. While extremely desirable, the ability to transmit and receive Full Motion Video due its wide bandwidth and high data throughput requirements and the Linking/Roaming capability will not be practicable until wide area data systems are in place and operational. Most likely these data systems will have to be provided by commercial entities or a consortium of local governments. The need for these services is uniform across our county, regardless of geographic area. What is variable is the amount of requests for these services, which is population density driven. Spectrum efficiency and sharing of resource can certainly provide a great deal of the capacity needed, but is not the absolute "fix".

11. Definition, engineering, design, implementation and mandating of common standards for all modes and modality of services to be used by public safety has to occur to achieve truly seamless integration of these systems. Sorely lacking now are "tight" receiver specifications, strict adherence to coverage areas and license parameters, universal trunking standards, and universal data transmission protocols. One "system requirement" not addressed in this NPRM is mandated training and federal licensing of the personnel who install and maintain this equipment. The discontinuance of F.C.C. technician licensing requirements and the substitution of industry's technician licensing program has contributed more to operational problems, interference and disruption of critical communications systems and their subsequent functionality, than any lack of spectrum or technology.

12. It is our opinion that the implementation of “system gateways” is a more viable solution than mandating the use of joint networks, especially where jurisdictional boundaries and politics would be of major consideration. The definition of “public safety licensees” and “joint networks”, simply due to the multiple layers of jurisdiction and bureaucracy, will have to be rigidly defined before final judgement can be passed on the use of the ubiquitous “joint network”. At what level do these “joint networks” and networking take place? Commercially owned and operated networks could be used to a limited extent for non-critical communications needs, where outages, limited availability, low security and limited liability and responsibility can be tolerated. Where life safety, security, operational and legal liability are involved, and where the comfort level of the personnel using these systems is involved, it is our opinion that we should provide the systems on which we operate.

13. Performance and technical specifications for receivers, and to a limited extent, systems, should be specified by the Commission. The NTIA is correct in their findings regarding the design and use of receivers. Very shortly, with the implementation of channel splitting in the 150 - 512 MHz bands, the lack of stringent performance specifications for receivers as well as the current general lack of adherence to transmitter parameters, will become painfully apparent. The Commission’s past position that “narrow banding” a system can be accomplished by merely reducing the transmitter deviation without any regard for the modulation acceptance, adjacent channel spurious and image rejection specifications for receivers was questionable at best.

14. The utilization of frequencies above 1 GHz for mobile and portables would require an increasingly dense population of base stations to provide the coverage considered to be acceptable by public safety users (typically 95,95), since these frequencies are essentially line of sight. In addition to the coverage issue, the power density required for reliable communications at frequencies above 1 GHz is proportionately greater. This compounds the need for more sites, since the power density (and therefore coverage) problem cannot be solved by merely increasing power output, which then in turn creates a health hazard due to exposure to high levels of non-ionizing radiation. There is much spectrum available between 150 and 900 MHz that, while it is currently allocated, is sparsely used. These are frequencies reserved for the Federal government for military and non-military operations and for "over the air" television channels. Additional resources would be instantly available if the Commission would modify its rules regarding operation on frequencies adjacent to existing television facilities⁹. The limitation restricting the use of unused television channels 14 - 20 to 13 metropolitan areas¹⁰ should be modified to allow expanded utilization of these frequencies.

15. Forcing public safety agencies to shift to the use of commercially provided services by restricting the permitted use of frequencies has several negative aspects. The cost for day to day operations would collectively would exceed the cost of privately providing the infrastructure; costs which in turn the local governments would have to pass on to the

⁹ 47 C.F.R. § 90.257, also 90.307

¹⁰ 47 C.F.R. § 90.303

taxpayers in the form of tax increases. For example, the District of Columbia's Metropolitan Police Department operates 30 mobile data terminals (MDT's) utilizing a commercially provided data network. The cost to the taxpayer for this service is \$3,000 per month (\$100 per MDT per month). If Prince George's County used as a basis those figures and equipped all of its public safety vehicles (2,200) with mobile data terminals, the cost to the taxpayers would equal \$220,000 per month. What incentive would commercial service providers have to keep costs down to the local governments and in turn to the taxpayer? Only in the event that modality and method is specified by the Commission and there is more than one service provider available in a given area can there be true competition so as to drive costs down. This obviously is not the case in the District of Columbia. The other negative issues again are; security, reliability, availability, and liability for communications involving life safety. The last negative issue is that local governments, through apparent necessity, may not comply with the rules restricting permissible uses of the frequencies.

16. The number of frequency coordinators authorized for coordinating services in public safety's spectrum should be reduced to one or two, for example IAFC/IMSA and APCO-AFC. The coordinators should be mandated to use a common data base for application and licensing information, utilize identical search processes and coordination criteria. Coordination prior to issue of license should continue to be the standard. Increased efficiency in the licensing process can be provided through mandated use of electronic filing. Coordination after the fact has the potential of abuse by the end users.